REMARKS

In examiner's correspondence, claims 1-20, 22-35, and 37-45 are pending, claims 1-22, 15-20, 26-35 and 41-45 are rejected under 35 USC sec 103, and claims 12-14, 21-25, and 36-40 are objected to as allowable but for their dependence on rejected claims. Furthermore, examiner withdrew allowable subject matter for claims 5-9, 21-25 and 36-40 based on Acusmith (US Pat. No. 6148407) and Sullivan et al. (US Pat. No. 6591224).

In the previous office action, examiner indicated that the "step of weighting an authenticating biometric value which allows the biometric value to be adaptably weighted is neither disclosed nor suggested by the prior art of record." Applicant respectfully submits that because the newly cited prior art is either improperly cited or distinguishable from the application for the present invention, the examiner should reinstate the allowable subject matter, and allow the application.

Claim Rejections under 35 U.S.C. § 103.

An invention is unpatentable under 35 U.S.C. § 103(a) ("Section 103") "if the differences between the subject matter sought to be patented over the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains."

To establish a *prima facie* case of obviousness, three criteria must be met. "First, there must be some suggestion or motivation . . . to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations." MPEP § 2142.

"Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination." *In re John R. Fritch*, 972 F.2d 1260, 1266 (Fed. Cir. 1992). Any such suggestion must be "found in the prior art, and not based on applicant's disclosure." *In re Vaeck*, 947 F.2d 488, 493 (Fed. Cir. 1991). Indeed, "[t]he mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification." MPEP § 2142.

A "clear and particular" showing of the suggestion to combine is required to support an obviousness rejection under Section 103. *Id.* For the reasons set forth below, Applicant submits that the prior art fails both to teach or suggest all the claim limitations, and to clearly and particularly suggest the combination indicated by the Examiner; thus, Applicant's claims are not obvious in view of the prior art references.

Concerning Aucsmith, Applicant respectfully submits that the cited application is not analogous art because it is not in the same field or reasonably pertinent to the problem the inventor is trying to solve. (see MPEP 2141) The prior art cited by the examiner discloses "a method and apparatus for producing computer platform fingerprints." (Aucsmith Title) There is no reference or teaching in the cited reference to a biometric marker. Rather, the term fingerprint, as used in the reference, consists of a computer platform fingerprint only, In comparison, the present invention teaches "a method and apparatus for calibration over time of histological and physiological biometric markers for authentication." (Secification Title) Since Aucsmith's teaching for producing computer platform fingerprints is not in the same field or reasonably pertinent to

calibration over time of histological and physiological biometric markers, Applicant respectfully submits the cited reference is not analogous art.

Furthermore, there is no motivation to combine the Acusmith reference with other cited prior art, and thus not available as prior art. Acusmith teaches a system for identifying a computer platform fingerprint. At no point does Acusmith disclose using the invention to record, recognize, store, or recall any biometric marker, or using a biometric marker for identification or authentication purposes. The present invention teaches a method and apparatus for calibration over time of histological and physiological biometric markers for authentication. Accordingly, Applicant submits that Acusmith, as cited by examiner is not available as a prior art reference because there is no motivation to combine it with other cited references.

Concerning Sullivan, Applicant respectfully submits the cited prior art fails to teach or suggest all the claim limitations taught by the prior art, and thus there is no prima facie case of obviousness. Specifically, Applicant's independent claims 1, 16 and 31 recite a method and device for calibrating changes in a user's biometric features over time, wherein one step comprises "adaptably weighting [an] authenticating biometric value." The specification defines "weight" as a value assigned to each biometric feature which indicates "the ability or strength of the measured feature to act as a unique authenticator of a person." See Specification, p. 15, ln. 3-4. As taught by the present invention, "adaptably weighting an authenticating biometric value" requires "[e]very authenticating value is averaged into the authentication template, changing the template with each authenticated biometric measurement. A weighted average is used to adjust how much each authenticating measurement changes the template." See Specification

p13 lns 20-21 and p14 lns 1-2. Applicant finds no mention of this element in any cited reference, nor any equivalent thereof.

Sullivan teaches a "method for normalizing biometric test scores generated by multiple biometric devices[.]" See Sullivan Col 8 ln 41-42. As discussed below, the referenced invention is intended to normalize biometric devise results to facilitate authentication based on which devise most accurately identifies a user. To achieve this result, the method disclosed in Sullivan weights the results of one devise to compensate for another device's inaccuracy. This means when one biometric device inaccurately identifies a user, that device's "score" will be given less weight then a device which accurately identifies a user.

In addition, the referenced invention "pertains to a technique for quantifying biometric device authentication accuracy characteristics for multiple biometric devices." See Col 4 lns 7-10. The quantified measurements obtained using the disclosed method can determine "whether a user is a "better" candidate for voice identification versus fingerprint identification." See Col 4 lns 23-25. Thus if the fingerprint identification device inaccurately identifies a user, but the voice identification device accurately identifies a user, then the results from the voice identification device will be more heavily weighted than the fingerprint identification device. As disclosed, Sullivan does not weight the results based on changes in the biometric markers, but rather teaches a method for integrating multiple biometric devices by weighting each device's results according to the devices accuracy in identifying a user.

In comparison, the present invention weights the results of the biometric device based on the "probability of divergence", the "ability or strength of the measured feature

to act as a unique authenticator of a person", "the likelihood of change over time for a particular biometric marker", the "relative difference between consecutive authenticating measurement", and "how often the user is employing the biometric device". In each case, "[a] weighted average is used to adjust how much each authenticating measurement changes the template." See Specification p 13-16. On the other hand, Sullivan does not teach calibrating the templates over time to account for changes to physiological or histological biometric markers.

Weighting

Next, Sullivan teaches weighting the statistical representation of the rates of acceptance and rejection to account for a biometric device's accuracy in identifying a user. The referenced invention utilizes "False Acceptance Rates" (FAR) and "False Rejection Rates" (FRR) to represent the statistical reliability of a biometric device. The invention defines the FAR as "the sum of the probability of obtaining that score (the number of times the score was obtained divided by the total number of attempts to log in using the particular biometric device), plus the probabilities of obtaining greater scores, if any." See Col 5 lns 28-32. Thus, "the FAR reflects the probability of obtaining the biometric score if the user were an imposter; and quantifies the security risk for the particular attempted access." See Col 5 lns 40-43.

Similarly, the FRR is defined as "the sum of the probabilities of obtaining each score lower than the given score." See Col 5 lns 65-67. The FAR and the FRR are comprised solely of a device's rate of acceptance or rejection. Thus an update in the FAR and/or FRR does not result in the calibration or modification of the template of the biometric data for each user, but rather a modification in the statistical representation of

each devises acceptance rate. Thus if one device inaccurately identifies a user, its identification will be give less weight on a subsequent attempt because its inaccurate results are less reliable then another biometric device which accurately identified the user. Accordingly, Sullivan does not disclose a method capable of accounting for changes over time of histological or physiological biometric markers because the template is never modified or calibrated to reflect a change. Sullivan's teachings are limited to weighting the reliability of a device, not "adaptably weighting the authenticating biometric values" to account for changes over time of histological and physiological biometric markers.

In comparison,

> [t]he present invention comprises the step of obtaining an authenticating or affirmative biometric value from within a range of authenticating biometric values weighting those values and integrating the values into an authentication data set or template. The biometric values are based upon a measurement of an internal biometric marker, such as an internal physiological or histological biometric marker. The measurement of the internal biometric marker results in a quantitative data set that can then be compared with an authenticating data set for the purposes of biometric identification and authentication. If the data set is confirmed to be authenticating, the data set can be stored electronically then used for purposes of calibration. See Specification p10 lns 14-21.

By using the obtained biometric values for calibrating a biometric device over time, the biometric values are adaptably weighted to account for variations in a biometric marker over time.

As discussed above, Applicant respectfully submits that Examiner's rejection of the present application based on Sullivan is unfounded because Sullivan does not adaptably weight the biometric data template as is taught in the present invention. Accordingly, Sullivan, either alone or in combination with the other prior art cited, fails to teach or suggest every claimed limitation taught by the present invention. Thus the present invention is not obvious in light of the prior art, and the present invention is in condition for allowance.

Beaston, on the other hand, is directed solely to a signature authentication device for signature capture and verification. Although Beaston integrates a calibration mechanism for calibration over time, Beaston also fails to disclose or suggest weighting the obtained biometric value according to a pre-determined degree of reliability assigned to it. Indeed, weighting is an inherently relative concept as the degree of reliability to be placed on one biometric value is only meaningful when compared to the degree of reliability afforded a different biometric feature. Beatson thus teaches away from such weighting as Beaston measures and verifies only one biometric trait.

In addition, it would not have been obvious to one skilled in the art to implement the calibrating feature of Beatson into the biometric authentication device of Bianco as Beatson is properly considered non-analogous art. Beatson is solely directed to authenticating signatures and excludes from consideration any broader application, including authentication of internal biometric features. One skilled in the art would thus not look to Beatson when contemplating a device capable of authenticating internal biometric measurements or a device capable of reading more than one biometric value.

Further, as discussed above, even if Bianco and Beatson were combined as the Examiner suggests, the resulting combination would fail to produce Applicant's invention.

Conclusion

Based on the foregoing, Applicant believes that the claims of the present invention are in condition for allowance and respectfully requests the same.

Should the Examiner have any questions, comments, or suggestions in furtherance of the prosecution of this application, the Examiner is invited to initiate a telephone interview with undersigned counsel.

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Respectfully submitted,

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